ROCKS and MINERALS

Official Journal of the Rocks and Minerals Association

A Magazine for Mineralogists, Geologists and Collectors

MARCH, 1945

25c

Vol. 20, No. 3

Whole No. 164

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ROCKS and MINERALS

PUBLISHED MONTHLY

Edited and Published by PETER ZODAC

March 1945

Contents for March, 1945

Entered as second-class matter September 13, 1926, at the Post Office at Peekskill, N. Y., under the Act of March 3, 1879

Specially written articles (as contributions) are desired.
Subscription price $2.00 a year; Current numbers, 25c a copy. No responsibility is assumed for subscriptions paid to agents and it is best to remit direct to the Publisher.
Issued on the 1st day of each month.

Authors alone are responsible for statements made and opinions expressed in their respective articles.

ROCKS and MINERALS PEEKSKILL, N. Y., U. S. A.

The official Journal of the Rocks and Minerals Association

CHIPS FROM THE QUARRY

CONVALESCING SOLDIERS NEED LAPIDARY MATERIAL

It has come to our attention that a part of the program for the soldiers at Camp Upton Convalescent Hospital on Long Island, N. Y. (who just arrived from overseas) consists of metal craft. It would add a great deal of interest and pleasure if lapidary work was incorporated in this class. We are sure that any contribution along the line of pieces of cutting material and equipment would be greatly appreciated by these men. A non-commissioned officer (a former member of the R. & M. A.), who has had some experience in cutting and polishing minerals, will be in charge of the proposed lapidary class. The soldiers are keenly interested in the class but they need equipment and supplies. All readers, and especially members of the R. & M. A., who can spare duplicates of gemmy minerals or lapidary supplies are urged to send them to Camp Upton. Address all contributions to

Education Dept., Bldg. 240
A. S. F. Conv. Hospital
Camp Upton, N. Y.

BALLARAT GOLD FIELD

Ballarat is a city of about 40,000 population (in southern Victoria) in S. E. Australia. It is 75 miles northwest of Melbourne, the 2nd largest city in Australia.

Ballarat is one of the oldest and richest gold fields in the state of Victoria. The first discovery of gold was made at Golden Point in August, 1851, in a gravel deposit. Seven years later, on June 15, 1858, a nugget weighing 2,217 ozs. was found at Bakery Hill, at a depth of 180 feet. This nugget called "Welcome Nugget", is the 2nd largest known from anywhere in the world. It brought over $41,000. It is eclipsed in size only by the "Welcome Stranger" which was also found in Victoria but at Moligul, near Dunolly, on Feb. 5, 1869.

The Ballarat gold field is approximately 5 miles long and 3 miles wide, and since its discovery more than $400,000,000 in gold has been obtained. It was the birthplace of gold mining in Australia. Gold, however, was first found in the state of New South Wales but production was small. But when huge nuggets were found at Ballarat and continued to be found, and the news spread around the world miners and others from everywhere rushed to the locality. As a result Melbourne grew to be a large and prosperous city whose progress and wealth started with the discovery of gold.

Geology

The gold field is in a region of thick beds of gravel, sand, and clay that have been buried by thick flows of basalt (in places several hundreds of feet thick). The early discoveries were made near the sources of old rivers where their gravels were exposed at the surface. Later these gravels were followed downward beneath the basalt flows and still later, vertical shafts were sunk through the basalt, clay, sand, and rested on the bottom of the gravels—the bedrock is Lower Ordovician slate and sandstone.

Mineralogy

A number of minerals occur in the field but aside from the gold nuggets few are found in quality suitable for a mineral collection. Some of these minerals are albite, ankerite, arsenopyrite, calcite, chlorite, copper (native), dolomite, gold (nuggets), pyrite, quartz, and stibnite.

Reference

Gold Nuggets of the World, by John Gaarden, 2309 Ocean View Ave, Los Angeles 5, Calif. This fine book has some fascinating stories of huge nuggets found throughout the world, with many illustrations in color. The author is a member of the R. & M. A.

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The Official Journal of the ROCKS and MINERALS ASSOCIATION

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CONCRETIONS

By S. C. EDWARDS
Colton, Calif.

One of the most common errors made by beginners in geological collecting and by old hands who just collect rocks could be avoided by acquiring even a slight knowledge of the nature of concretions.

Curator Bassler of the Smithsonian Institution in Washington, D. C., reports that one of the most often received specimens is really a concretion sent to the museum as a wonderful petrified this or that and that the sender of such specimen is hardest of all to convince of his error.

Perhaps a chief reason why ignorance of concretions is so common is that geological writers give so little attention to the subject. Authors of more extensive works on special branches of geology emphasize the above statement. "In geological work concretions are given little standing and are generally regarded as little more than curiosities."

"Paleontologists are likely to mention concretions only occasionally in connection with enclosed fossils. Other geologists are apt to let them severely alone, except for briefest mention. Concretions belong to a sort of no man's land in geology."

In an elementary study it seems necessary at the outset to have a simple definition of the subject. The student's grasp of such definition is easier if successive steps to the process involved are outlined.

Water percolating through soil and sand dissolves and carries in solution much mineral matter. Some of this mineral in solution, often by crystallization, acts as cementing material to form concretions. The bulk of many common concretions is sand. When a cementing material pervades a body of sand, under proper conditions, concretions may be formed.

A concretion is a body formed by solidification of cementing material, previously dissolved in surface water, and may enclose much local material.

Calcite concretions form by simply enmeshing sand, in the immediate field, without disturbing the crystallization process of the calcite.

Mineral crystals form when collections of molecules take place in open spaces or in liquid. Concretions form embedded in the country rock. Concretions are stones that grow. In formation they resemble geodes. Both are concentric. Growth of a concretion is external, that of a geode, internal. The force required is "a form of molecular attraction, influenced, sometimes, by electrical relations." (Todd.)

One of the questions uppermost in the mind of the collector is what elements of construction gives rise to the various forms of concretions? Those of definite, particular shape produced by one field are seldom duplicated in any other place.

We may mention a few local forms; spheres of calcareous material near Water Station east of Barstow, Calif.; grown together spheres of sandy material from mountains in Utah, (See Fig. 2); double strand, rope-like forms of sand calcite, from Imperial County, Calif., one twisted right, and at about the center of the specimen an abrupt change of twist to the left, (Fig. 9); Signal Mountain Calif., sand spikes (Fig. 1).

The above-mentioned fields seem to concentrate on their particular type, while the broad fields bordering the Salton Sea (in Calif.) furnish specimens combining

about all of the possible shapes; marbles, dumbbells, peanuts, steamships, battle axes, etc.

Starting from a point concentric action results in spherical forms. Just why in some fields elongation of that center activity into a log form is not easy to demonstrate. Change in direction of twist of rope forms mentioned also appears a secret of the field producing them.

Many of us have speculated on the cause of the shapes of Signal Mountain forms. The spherical head is not so puzzling as the "handle." Elongation of activity might produce the tapering cylindrical spikes. But that is not all of the puzzle. Many of the multiple forms include several handles, all parallel. (Fig. 1). If not so easily proven wrong, we would charge gravity with the force required to produce those parallel handles, in vertical position; however, many of the handles contain mica-marked stratifications, proving formation in a horizontal position. When I found such specimens nicely imbedded in sand, handles parallel and pointed north I was reminded of a phrase in Todd's definition of a concretion: "A molecular force with possible electrical relations."

Concretions seem to be relatively common throughout the world. They are often collected and treasured by amateurs as wonderful petrified objects and when exhibited to one having some knowledge of concretions, he hesitates to prick the bubble of enthusiasm of the collector by saying, "Petrified nothing. Just concretions."

Two such personal evidences were impressive. A long-time collector of minerals and curious natural objects presented me with what he claimed was a petrified turtle egg, the one presented being from several collected some years before in the Mojave region of California. The collector stated that a friend who had seen them said that they were concretions, but if I would saw one I could easily see that his claim of "egg" was right. I followed his suggestion. Figure 4 is a photograph of the sawed, polished specimen—a not uncommon concretion resembling a

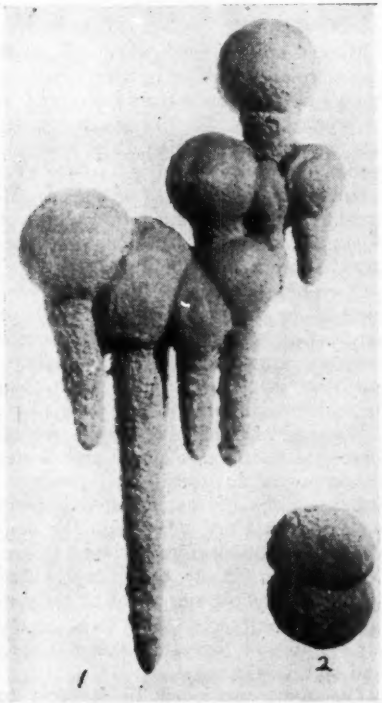


Fig. 1. *Concretions from Signal Mountain, Calif.*
Fig. 2 *Concretion from Utah*

Fig. 3 *Concretion from Cabbage Patch, Calif., a little distance north from Signal Mountain.*

drawing in a text book of a partly incubated egg.

Another collector in San Bernardino, Calif. gave an account in the daily paper of a wonderful specimen he had purchased from an old Indian near Needles—a petrified Indian child's foot, "probably of the old Indian's own tribe." I visited the collector, tried in vain to borrow the specimen to photograph, but he said the specimen had cost him "considerable, and that he was not going to be bamboozled out of it." My interest in the incident was considerably enhanced by the fact that the year previous while on a visit to Vancouver Island, the lady of the house presented me with a "funny-looking" rock that had been around the house for a long time, (Fig. 8) a little smaller, but almost a complete duplicate of the concretion collected by the Indian near Needles. I left the San Bernardino collector, totally unable to prick the bubble of bliss, but some weeks after, he confided to me that a geologist friend of his told him, "call it a concretion. Don't go on making a fool of yourself."

Collectors interested in fossils soon learn that some of the finest specimens come from concretions. Such a storage place for the enclosed fossil preserves the organic form against all depredations till the arrival of the concretion collector.

Several years ago while searching for concretions in a canyon a few miles east of Cape Mendocino, Calif., among pebbles and boulders in a stream bed, some rocks appeared with a very visible equatorial seam or even fracture. One of the largest found, about 20 in. in diameter, interpolar measure about 15 in., when hammered with a round rock along the equatorial seam, opened in halves and revealed on one side the concave print of a beautiful 8 in. shell, shaped like a modern scallop, on the other side, the con-

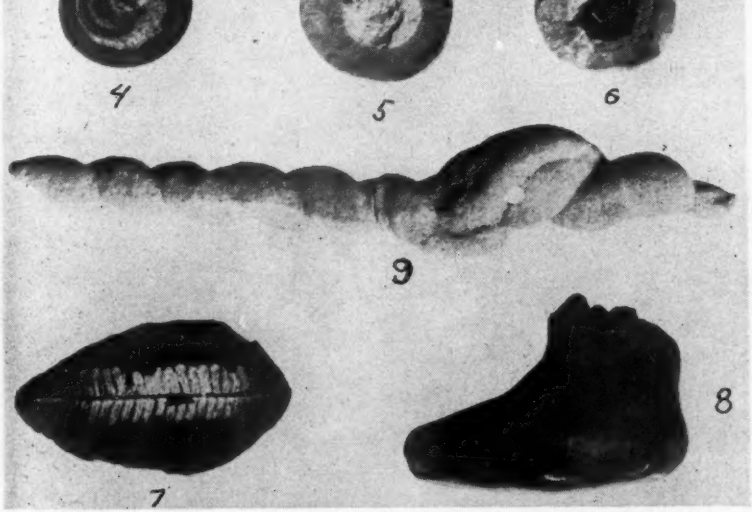


Fig. 4 *Concretion from the Mojave region of California.*
Figs. 5 and 6. *Hollow, sand filled, concretions from the plains of Colorado.*
Fig. 7. *Concretion from Braidwood, Ill., opened to show fossil fern.*
Fig. 8. *Concretion from Vancouver Island, B. C., Canada.*
Fig. 9. *Concretion from Imperial County, Calif.*

vex fossilized shell itself.

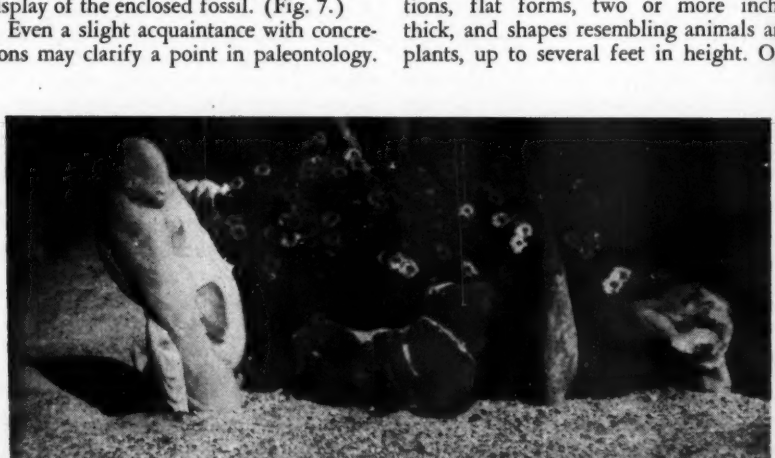
The local collector who accompanied me returned the following day with able help and carried the specimen away. It was afterward sent to the National Museum.

In the Braidwood, Illinois, area have been collected very many concretions bearing in the center fossil ferns. Stratification along the plane of the embedded frond seemed common and slight hammering along the seam usually resulted in the display of the enclosed fossil. (Fig. 7.)

Even a slight acquaintance with concretions may clarify a point in paleontology.

Several years ago a collector friend told me of fossil primate tracks in the rocks at Cabbage Patch, a little distance north from Signal Mountain. On visiting the place we found many queer shaped concretions, among them one formed quite like a plantigrade foot. (Fig. 3). The possibility of a print in the rocks of such a "pre-historic" foot, easily taken for "tracks", ended the search for footprints.

Many of our readers have seen along the roadside ornamental use of concretions, flat forms, two or more inches thick, and shapes resembling animals and plants, up to several feet in height. One



Figs. 10 and 11. *Part of a long series of concretions from the Salton Sea area in California that have been "dolled up" to resemble animals, etc., which dorn tops of gate posts and the rock garden on the property of J. W. Antoine, on Palm Ave., Grand Terrace, near Colton, Calif.*

may view such a display at the home of J. W. Antoine on Palm Avenue, Grand Terrace, south of Colton, Calif. Topping the gate posts and in long processions across the rock garden are concretions brought from the Salton Sea area. Their resemblance to animal forms has been greatly enhanced by setting in cement a small glass eye, in the proper place on the "head." Figures 10, and 11 are from photographs taken in the above-mentioned rock garden.

We might recall a few of the long list of interesting items about concretions: The familiar sand crystals of South Dakota; the hollow, sand filled, iron carbonate nodules from the plains of Colorado (Figs. 5 and 6); the chessmen forms from British Columbia; sandstone pillars, 30 ft. high, 70 ft. in circumference, with mushroom caps of Barite sandstone, Nottingham, England. (Clowes, 1889); sandstone logs projecting from cliffs in Dakota, like great guns from portholes in a fort; great balls up to 12 ft. in diameter at Cannonball river, South Dakota; Rock City, Kansas, scores of great spheres, some 27 ft. in diameter.

The final effort in this brief essay is to impress upon the general collector the idea that in most cases the wonderful petrified mushroom, egg, fruit, part or whole of a small animal, and similar organic forms will under competent scrutiny turn out to be concretions.

Reference

Sand Concretions from California. By S. C. Edwards. *Rocks and Minerals,* June, 1934, pp. 82-83.

RATS IN COAL MINES

By PETER ZODAC

In the anthracite mines of eastern Pennsylvania, rats are not only common but are encouraged to stay because it is a good sign of safety from rock falls, etc. when they are around. For some reason, not known to man, a rat can sense when a cave-in or a heavy fall of rock may take place and it will rush out. Consequently, when miners see rats fleeing from an area the men, too, will rush out.

During lunch time underground, miners throw crumbs to the rats who often are so tame that they will actually take them from a miner's hand as I have seen this done more than once at the #14 Colliery in Tamaqua, Penn.

When I saw my first rat underground, the appearance rather surprised me and not realizing that mine rats were tame, I made a grab for it and to my amazement it allowed itself to be picked up but—I dropped it in a hurry. No rat bite for me!

One day an electrician at the Tamaqua Colliery played a little joke on some rats. He rigged up a hot plate—put some crumbs on it—and when a number of them got on the plate and began eating, he turned on the juice. The rats gave one loud squeek—jumped up in the air so quickly some almost landed in our laps—and then they disappeared so suddenly it was almost uncanny. It was a good thing for the electrician that a miner didn't see him do the stunt as a fight would surely have resulted.

I never heard of a rat biting anyone underground, nor were they molested in any way (outside of the electrician's joke), but I have seen a number of dead ones which had been killed accidentally. Investigations showed that rats often travelled the slopes (inclined shafts in coal mines are called slopes) by walking the rails but their uncanny sense of danger seemed to fail them, however, as many would be run over by cars.

TOPAZ AROUND THE WORLD

By HARRY Y. DRAKE

It is interesting to select a mineral that has a fairly wide distribution and trace its more prominent occurrences throughout the world. Topaz lends itself well to this consideration for it has many noteworthy characteristics, and the localities where it is found are not numerous enough to make a survey of them tedious. Moreover it is not a strategic war mineral, so a description will not be hampered by military censorship.

Chemically topaz is aluminum fluo-silicate with the formula $ALF(Si_2O_4)$. Its composition varies in that part of the fluorine may be replaced by the hydroxyl or OH radical. It crystallizes in the orthorhombic system and illustrates this form of crystal symmetry well, crystals usually consisting of well-developed prisms terminated by combinations of domes, pyramids and basal pinacoids. Although its hardness is 8 in Moh's scale exceeded only by chrysoberyl, corundum and diamond, it finds little application as an abrasive since it is brittle and possesses a strongly developed basal cleavage. This cleavage is an aid in identifying water-worn masses of topaz. Its specific gravity of 3.5 which is greater than quartz is also an aid to its recognition. When intensely heated topaz loses fluorine and at white heat becomes sillimanite.[1] Topaz was produced synthetically by A. Reich who subjected a mixture of silica and aluminum fluoride to a strong red heat and afterwards ignited the mixture thus obtained in a current of silicon fluoride.[2]

Many of the features of topaz can be best noted by observing it in its various occurrences. A visit to all the localities where it is found would take us to every continent, but we had best choose a few of the more important ones and like a world sightseeing tour, our route will be chiefly in the northern hemisphere. Since we are free to choose our course it will be an advantage to first study a locality where topaz is found in the rock in which it formed. The Thomas Range of mountains in Utah will be an excellent place to begin. Located in a little-traveled and almost uninhabited section of western Utah, these mountains have been known as a topaz locality since 1859 but were seldom visited by mineralogists. In 1934 Arthur Montgomery and Edwin Over spent a month studying and collecting in this place, and it is chiefly from Mr. Montgomery's report[3] that the writer has drawn his material for the present description. The rock composing the Thomas Range is chiefly rhyolite which in places contains lithophysae and in these cavities crystals of topaz are found. Both transparent and opaque crystals occur, the transparent ones being from ¼ to 1 inch long, and generally showing 2 prisms terminated by one or more pyramids combined with domes and base. Originally they were all sherry yellow in color, but where exposed to light and heat they have lost all color. The opaque crystals, sometimes called "sand topaz", consists of innumerable minute crystals of quartz cemented together by topaz, and of simpler crystal form than the transparent ones. These opaque crystals are often grouped in clusters radiating from the prism faces of a common crystal in a form not unlike the old military weapon called a chevaux de frise. Associated with the topaz are the rare minerals bixbyite and pseudobrookite.

TOPAZ IN JAPAN

Proceeding to Asia we should not fail to stop at Japan, since war conditions cannot interfere with an imagainary trip such as this. In the pegmatites of Tanokamiyama pale blue crystals of topaz up to 2" across a face are found in cavities with orthoclase crystals. In these topaz crystals the prisms are shorter in relation to their width than those of the Utah crystals giving them a stouter form. The terminations are often etched, that is they are roughened, being covered with small pits caused by the corrosive action of vapors after the crystals had formed. This etch-

1. Bull. U. S. Geological Survey No. 616, 1916, Page 409.
2. loc.cit.
3. Arthur Montgomery. "Minerals of the Thomas Range, Utah. *Rocks and Minerals*, November, 1935, pp. 161-168.

ing is found to be quite prevalent in topaz, and may also be produced artificially with proper reagents, the form of the etching figures giving a clew to the crystal structure of the mineral.[4] Colorless topaz is found at various places in Japan as at Naegi Mino and it is for this form of the mineral that Japan is chiefly noted. Some crystals are prismatic, striated, and terminated by domes and pyramids, others are stout and simpler in form, many are limpid and practically flawless.

TOPAZ IN SIBERIA

Leaving Japan we travel to the Siberian and Ural Mountains localities which have long been noted for topaz. To most lovers of fine mineral specimans the occurence at Alabaschka ranks first. Beautiful groups of smoky quartz and feldspar with crystals of pale blue clear topaz scattered over them are among the most coveted of mineral specimens. In these topaz crystals the base is usually the chief terminal plane, so that the crystals look rather cubical. The pale yellow-brown topaz from the Urulga River district fades when exposed to light and must be kept covered to preserve its color.

In the Ilmen Mountains topaz of a distinctive red-violet color is found, and the Transbaikal region is also a noted source of topaz. Much of this Siberian material is used for gems, and it is for this quality that topaz has been admired and sought from early times. The word "topaz" comes from a Greek word meaning "difficult to find" in allusion to an island where stones first called topaz were found. In Classical times however topaz simply meant "a yellow stone" so we cannot be sure that the ancients recognized topaz as we use the term today. It is the designated birthstone for November, and various magical properties have been ascribed to it. Many of the Siberian topaz gems are of large size, brilliant and clear, some blue, others shades of brown or colorless.

TOPAZ IN GERMANY

Crossing Europe we should stop in Saxony where topaz is associated with cassiterite in the tin mines. At Schneckenstein, in association with quartz, stubby little crystals of topaz of pale yellow color often project from the surface of the rock through which massive or crystalline topaz is diseminated. At Cornwall in England, topaz is also found in the tin mines with cassiterite

TOPAZ IN BRAZIL

At present the most remarkable topaz locality is in Brazil, in the state of Minas Geraes, and it is there that we should next go. Ouro Preto and Villa Rica produce the finest material, the topaz being found in decomposed material which was probably a mica schist derived from an augite or nepheline syenite.[5] Many crystals have cavities filled with CO_2. The color of Brazilian topaz covers a wide range from light yellow, through amber to dark brown, and rose-red to dark amethyst, while some is pale blue. The most prized color is the true sherry, a yellow-brown, and crystals of this material are usually under 3" long by 1" or less broad, and are simple prism and pyramid combinations, often with striated and etched pyramid faces. Poor color stones are often "pinked, that is heated gently until their color changes to rose hue, which tone is permanent and beautiful.

Recently several topaz crystals of very large size have been brought to the United States from Minas Geraes, Brazil. The largest of these, weighing 596 pounds, has been acquired by the American Museum of Natural History in New York City and placed on exhibition in the Hall of Minerals. It measures 24" x 30" x 19", and is displayed in a separate case with special lighting. Another similar crystal weighing 250 pounds is on display in the Harvard Mineralogical Museum at Cambridge, Mass. The crystals are of fine quality with beautiful sharp faces. Other large crystals from the same locality are the property of the Field Museum of Natural History, Chicago, and the Smithsonian Institution, Washington, D. C.[6]

TOPAZ IN MEXICO

Practically all the topaz crystals we have mentioned so far have been attached

4. A. P. Honess, *The American Mineralogist*, April, 1921, pp. 71-77.

5. O. A. Derby, *Amer. Jour. Science*. vol. 11, 1901, as quoted in Bulletin 616, U. S. Geol. Survey.

6. *Rocks and Minerals* Vol. 15. Nos. 3 & 5, Mar., May, 1940.

to the matrix by the base, making them possess a single termination. At San Luis Potosi in Mexico we can see topaz crystals that are doubly terminated. These occur in a rhyolite and in other ways are similar to the Thomas Range, Utah crystals, except that many are attached to the rock by a prism face.

TOPAZ IN CONNECTICUT

Back in the U. S. A. we would perhaps like to check some of our own localities against those in foreign lands, but we would find the crystals from Maine and New Hampshire as well as those of Colorado and Texas quite similar to ones we had seen in Japan and Russia. If we were to look for a unique occurence in America perhaps Long Hill, near Trumbull, Conn., would furnish the best example. Here, near a tungsten mine, topaz was present in quartz veins in quite unusual amounts. A large block of topaz, upon being broken up, was found to contain many fine crystals.[7] These were of simple form, with rough surfaces and up to five inches on the longest axis. These large crystals, often coated with margarite are not handsome specimen material but help to add variety to a collection of the mineral.

In our itinerary we have been able to note most of the more important characteristics of topaz. Its excellence as an illustration of some crystal forms of the orthorhombic system, its variety of color, the wide range in sizes of its crystals and the minerals with which it is associated. Small brilliant crystals from Utah, limpid ones from Japan, pale blue gem crystals from the Urals and wine-colored or giant ones from Brazil, all are illustrative of this mineral. Whether as a sparkling gem or a fascinating specimen topaz is attractive and instructive.

7. James G. Manchester, *The Minerals of New York City and its Environs*. p. 38.

General Literature

(Sources of information other than those mentioned in foot-notes)

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3. "Gem-Stones," by G. F. Herbert Smith.
4. "Mystic Gems," by Harriet Keith Forbes, 1924.
5. "A Book of Precious Stones," by Julius Wodiska, 1909.
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7. "A Text-book of Mineralogy," by Edward Salisbury Dana, 1898.
8. "Getting Acquainted with Minerals," by George L. English, 1934.

WATER CAVES OF YUCATAN, MEXICO

The Yucatan peninsula of southeastern Mexico is remarkable for its underground rivers (no surface rivers are present). Practically the entire peninsula is of limestone formation, through which the underground rivers flow—oftentimes forming huge caverns which sometimes reach the surface. When the caverns reach the surface, and many of them do, they are called cenotes or water caves.

The ancient Indian inhabitants of the region marked the course of these underground rivers by heaps of stones and their towns and cities were always built near them.

The rivers lie from 20 to 500 feet below the surface and many of the houses that are built over them (especially in the city of Merida where they average 30 feet in depth) have pumps connected with them.

One of the most famous caves is in the village of Bolonchenticul, 38 miles east of the city of Campeche. The name Bolonchen means 9 wells, which are found in the cave, but the cave itself is locally called *La Gruta de Xtucumbi-Xunan* (Hidden Woman), because legend has it that a beautiful Indian girl, due to an unfortunate love affair, ended her days in the gloomy cave by leading a hermit's life.

The cave (an enormous one), is 500 feet deep, and it forms an awful hole when viewed from the surface. It is reached by an inclined stairway, 1400 feet long. Blind fish, (like those in the famous Mammoth Cave of Kentucky), lizards, bats, swallows, insects, etc., are to be found in it. Many beautiful stalactites

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COLLECTING GEODES — THE HARD WAY

DICK ROST
1101 Elmwood Rd.
Bloomington, Illinois

BOB SOLOMON
1503 East Olive Street
Bloomington, Illinois

Two high school boys make a bicycle trip to the famous geode areas in the western part of their state and that around Fox City in the northeastern tip of Missouri. Bloomington is in central Illinois.

The geode beds near the confluence of the Mississippi and the Des Moines rivers have long been on our list of places to visit. Last summer our dream was realized but not in the manner planned. Instead of a fast and comfortable automobile ride, we packed blankets, extra clothes, our rock hammers and collecting sacks, and improvised carriers on the backs of our bicycles. Although anxiously awaited, we did not realize that the trip we were starting on the morning of August 13th, 1944, was to be the greatest adventure of our young lives.

The 13th proved to be one of the hottest days of the year; the temperature ranging near 100° on the highway. We were plenty jaded at noon, when we reached San Jose, Illinois, our half-way mark for the day. After a lunch of sandwiches we pushed on. That night we went through Havana on the Illinois River, and pitched our tent on the western side of the river valley.

As we were nearing Carthage, Illinois, on the next day, which was a scorcher, we noticed some odd looking flat rocks in a large clay cut along the road, in the vicinity of the La Moine River. Dismounting, we discovered these to be real geodes, the first we had ever seen in the native rock. Upon closer examination, we found them to be of poor quality, but some contained crystalline sphalerite, while others had small crystals of dolomite and quartz. They had been flattened, evidently due to pressure of a by-gone age.

After two full days of riding we arrived at Hamilton, Illinois, 150 miles from home. Here we set up headquarters at the Granite Hotel, a friendly place whose owner and his wife were interested in geodes, and apparently much interested in geode hunters on bicycles.

Collecting Around Hamilton, Illinois

The next day we started our expeditions into the surrounding country. Loaded down with packing boxes and sacks, chisels and rock hammers, we arrived at our first location, a limestone quarry south of the railroad depot at the southern edge of Hamilton. The quarry itself is a great pit in Burlington limestone, accessible through only one road, so that when a person is inside he feels as if confined to the pit of eternal judgment. This is a heartbreaking spot for geode hunters, because the geodes, four to eight inches in diameter, and containing beautiful saddle formations of dolomite, are too deeply integrated in the huge blocks of limestone to be removed. We did, however, manage to find some specimans which by good fortune had been loosened from the matrix by blasting.

Immediately south of the quarry is a small stream running approximately east and west. We picked up the geodes by the gunny sackful, took them to a large boulder and cracked them open. The geodes were almost perfectly spherical with a shell usually one-fourth inch thick and ranging in diameter from one to three inches. Most of them were standard quartz crystal geodes, although often stained quite dark by iron. There were some containing solid crystalline quartz, others good little individual calcite crystals on quartz, and some dolomite. The thrill of working one's own first geode bed and cracking the formations on the spot can hardly be imagined; consequently it was quite late when we started home. As we left, with our bicycles loaded with well over 100 pounds of glistening rock, and a 160 pounds of beaming geologist, we were informed by the forman who had been very helpful, that we could have all the dynamite boxes we could find. ....

After leaving our rocks at the hotel, which was headquarters, we returned to the quarry at nine o'clock to find boxes for shipping our specimens home. With

only small flashlights we were caught in a summer electrical storm. Keeping out of the intermittent showers was bad enough, but the things we saw were beyond description. Standing on the edge of a monstrous rock pit illuminated only by streaks of blue lightning, and reflected by the driving silver rain, was an experience never to be forgotten. The outline of objects such as trucks, sheds, and the huge rock crusher, were visible as grotesque shapes in the flashes of lightning. Needless to say as soon as we had our boxes we left for Hamilton—pronto.

The morning of the second day found us moving north along route 96, the famous Seneca Highway. We planned to get to Nauvoo that day, in order to obtain some particularly fine geodes comparable to specimens we had been shown by our host at the hotel: They were over one foot in diameter with quartz crystals as big as a man's thumb. As we were peddling along about 2½ miles from Hamilton, we spied a rolling hillside covered with geodes of all sizes and shapes, apparently washed out of their earthern matrix. Here the amateur geologists really had a field day. As the geodes were lying about, all we had to do was gather a pile, sit down and crack them. Some were as large as eight inches in diameter. The percentage of good geodes here was very high. Most of them had unstained quartz crystals lining the interior of nearly spherical chalcedony. No solid crystalline specimens were found, but several contained mammillary chalcedony. Several others were lined with brilliant quartz crystals that had been stained a beautiful orange. One novel geode that was found was approximately eight inches in diameter; it was formed by the joining of two small geodes, in cross section—a geode shaped like a large B.

Famous Warsaw, Illinois, Locality

Giving up the idea of ever reaching Nauvoo, we peddled our load of rocks back to Hamilton, by noon, in order that we might reach the famous Warsaw locality that afternoon. After a good dinner at the cafe, we again set out with our collecting equipment but in a southerly direction. The ride to Warsaw was interesting and here it might be pointed out that there is no way to see the country and get so much enjoyment out of traveling as from the seat of a bicycle. We were none too sure of the location of the geodes at Warsaw, but took the first road east of town in a northerly direction (because of a turn the road approaches the town from the east.) This proved to be a mistake, for at the juncture of the road and the creek where we should have found geodes, we found only a few cephalopods (fossils). We hiked along the creek toward town and found a stone bridge where a road closer to town crosses the creek. Here nature has made geodes both in quality and quantity.

In the huge grey limestone cliffs (Warsaw-Spergen limestone) there are few crystalline quartz geodes, much mamillary chalcedony, calcite, (and all modifications therof, including dolomite). One geode two inches in diameter was found with pink spikes of calcite radiating toward the center—a beauty. Another about ten inches in diameter was composed of large bubbly formations of chalcedony stained a golden brown, and flecked with feathery crystals of an unidentifiable mineral. Here also were many small (four inch) geodes lined with pink and clear calcite scalenohedrons. When we arrived in Hamilton shortly after nightfall, we had in our luggage boxes some quality geodes worthy of any museum.

Collecting In Missouri

On Thursday we started out on what was to be the climax of our adventure. We crossed the mighty Mississippi to Keokuk and headed toward the old town of Fox City, Missouri, we had read about in the February, 1940, issue of *Rocks and Minerals*. After considerable trouble trying to find the right route, we finally started out, first south and then west, to Wayland, Missouri, a jaunt of 12 miles. At Wayland we asked directions to the town of Fox City about which we had read. After recovering from fits of laughter, the storekeeper told us that Fox City should not even be called a hamlet, for there were there only two stores and three houses She did, however, direct us to the home of Mr. Otho Hagerman, 3 miles distant, saying that he might be able to help us, and that we should be sure

to see his collection. Because of their proximity to the geode beds (of which we did not yet know the location) they had accumulated a great deal of trading material. With this, Mr. and Mrs. Hagerman had delt with other collectors and had amassed the largest and most beautiful private collection of agates and petrified woods we had ever seen. Mr. Hagerman gave us some fine fossil coral found in the vicinity as well as the directions for traveling the 7 miles into the unknown, to the old historic town of Fox City.

The road was a one way clay road rivaling any roller coaster we had ever seen. The instructions of our friend kept us from getting on the wrong road, for there were many tempting junctions. After considerable leg work we saw one dilapidated building standing on a hill. Inquiring from a native we learned that we had just seen Fox City. From here it was a small matter to locate the spot on the Fox River bank where the geodes were supposed to be. Seeing nothing but a black dirt bank along the river, we were greatly disappointed. Our morale was suddenly boosted, however, by the discovery of a quartz geode a foot in diameter near the edge of the water. Leaving the treasure we forged along the creek bank until suddenly there loomed before us what we had pedaled 150 miles to see, a solid wall of limestone containing three horizontal layers of geodes, one right after the other like the pearls in a necklace. Never in the history of "rock hounds" have hammers been put into action as quickly as ours were that day. We spent several hours there, amassing a "fortune" of glittering crystals until we noticed the golden sunset. Great guns! We were over 15 miles from headquarters, the sun was setting quickly, and each of us had to get over 100 pounds of rock out of the wildest hill country this side of the Black Hills. We lugged the geodes a half-mile back to our bikes and loaded up. It can safely be said that our two wheeled trucks could not possibly bear another pound, for they would hardly roll.

Homeward Bound

The series of spectacular mishaps and accidents resulting from riding a bicycle loaded to three times its capacity over six inch ruts and bumps finally ended with one bicycle rearing up on its rear wheel like an angry broncho, in front of a farm house. The mistress of the place did not laugh as hilariously at us as we had at each other, but asked us where we were going. We replied that our destination was Hamilton, Illinois, by way of Wayland, Missouri, and Keokuk, Iowa. When she volunteered the information that her husband was driving his car into Wayland and would be glad to take our precious geodes with him, we were flabbergasted. After eating the world's best home grown cantaloups, we headed our bikes for Wayland. After procuring our geodes in Wayland, we, being 175 miles from home and loaded down with several hundred pounds of rock, started on a 12 mile trip in what seemed to be the blackest night of the summer.

The trip was actually uneventful although quite unusual, for having no means of illumination, we could hardly see the road. We reached Hamilton just in time to patronize the hamburger palace before it closed at midnight. This was the end of a busy day but we really had something to show for it. Later we were told that at the spring of the year at the particular cliff where we had found our specimens, snake hunters had collected numerous rattlesnakes.

Friday morning was spent in packing geodes into crates preparatory to having them trucked home. Not feeling like going on any more jaunts into the back country, we spent the afternoon at the county fair in Hamilton.

Saturday morning we started the trek home. Toward the end of the day after passing Camp Ellis and other points of interest, we decided not to go immediately to Havana, but to detour by way of Lewiston and visit the Dickson Mounds. Here we purchased some fine Indian artifacts at good prices, for they were disposing of the famous Payne Collection. Saturday night found us sleeping soundly in a Havana hotel room after a trip of better than 90 miles. Sunday we completed the trip of 60 miles to Bloomington in six hours.

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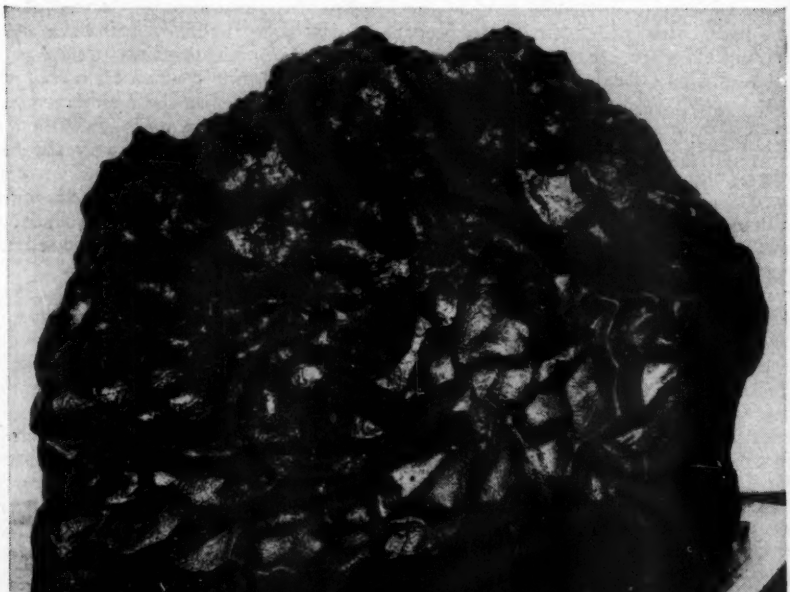
NEW LARGE METEORITE FOUND

The ninth largest meteorite thus far found in the United States has just been received by the Smithsonian Institution and is now on display at the U. S. National Museum, Washington, D. C. It was found on Sunday, Sept. 24, 1944, by two evacuees of Japanese ancestry now living at the Topaz War Relocation Center in Utah.

Meteorites are those meteors, or shooting stars, which actually reach the surface of the earth. The vast majority are consumed by the frictional heat created by their swift passage through the earth's atmosphere, only a very few getting through for a landing. The finding of a meteorite is therefore a rare event, especially such a large one as this latest discovery.

Drum Mountain meteorite which weighs 1,164 pounds was found on the north slope of the Drum Mountains 16 miles west of Topaz. The finders were Akio Ujihara, formerly of West Los Angeles, California and Yoshio Nishimoto, formerly of Oakland, California. Mr. Ujihara, a graduate of Polytechnic Engineering College at Oakland, recognizing that this was no ordinary rock, suggested that a sample be sent to the National Museum for identification.

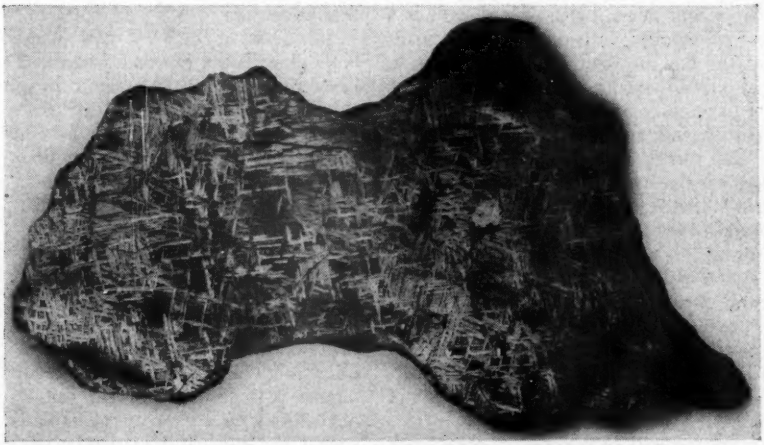
At the Museum it was promptly identified as a meteorite. The finders were so advised and their cooperation requested in obtaining the specimen for permanent preservation in the National collections. With the assistance of some of their friends, the finders arranged for transporting the meteorite to the railroad and



A photo of the new meteorite that was found on the north slope of Drum Mountains, Millard County, 16 miles west of Topaz, in western Utah. It is the 9th largest individual ever found in the United States. Weight 1164 lbs. The flat surface at right is where slices were removed for study. (*U. S. National Museum photo*)

shipping it to the National Museum. It now occupies a prominent place in the Museum's meteorite collection, which contains specimens of more than half the known falls recorded anywhere on the earth.

Editor's Note: Mr. Nishimoto is a member of the R. & M. A.



One of the slices taken from the Drum Mountains meteorite that has been polished and etched to show its octahedrite strucure. The round dark inclusion is troilite (sulfide of iron).

(U. S. National Museum photo)

Platinum First Found In Colombia

The platinum deposits of Colombia are the second in importance in the world, being exceeded only by those of the Urals Mts. in western Siberia. The mineral occurs as grains and small nuggets in river gravels associated with gold, chromite, ilmenite, and magnetite. The deposits are found in a region lying west of the central ridge of the Colombian Andes (due west of Bogota, the capital and largest city), especially in the Choco district, in the gravels of the San Juan River and its tributaries and in the basin of the Atrato River.

Platinum was first brought to the attention of the scientific world in 1735, when the deposits in Colombia were visited that year by the Spanish traveler Don Antonio de Ulloa, who was a member of a scientific expedition sent to South America to measure an arc of the meridian.

Because of its resemblance in color to silver, the metal was soon called platina (plata is the Spanish word for silver). Hence the English name, platinum.

Belemnites From New Egypt, New Jersey

In the greensand deposits at New Egypt, N. J., very fine specimens of belemnites are found. These brownish pencil-shaped fossils, which can be extracted loose from the sand, are called *Belemnitella Americana*. The green sand (glauconite marl) is of Cretaceous (Vincentown) age.

New Egypt, a small village, is in the western part of Ocean County, in the central part of the state.

HUNTING GEODES IN INDIANA

By WALTER F. EISELE

Arcanum, Ohio

The best way to locate the geode fields of Indiana is to reach S. E. Lawrence County and begin hunting, for here is a land of wooded hills and winding roads and the best of road directions seems to lead only to getting lost.

I have made about a dozen trips to this territory and am still hunting for some of the places I once located, but who cares for the lost deposits, for unlucky indeed is the rock hunter who does not find several new places as a reward for a day's hunting.

As far as I know, few geodes have been found north of Bloomington and I would locate the best geode country as, east of highway 37, south of Bedford, north of Mitchell, and west of highway 135, chiefly in the southeast quarter of Lawrence County in southern Indiana.

Someone will probably take me to task for making this location, but no one knows all the locations, and here is where I have had the best luck.

As an illustration of my ability to lose myself, once in the northern part of this territory, I began following a back road leading up a rocky little valley drained by "Knob Creek." The so-called road became smaller and rockier as we passed one small house after another until we came to the last small house where the hill farmer, believing no one would use the road beyond his house, left his old car standing exactly in the center of the road.

We could drive no farther, so parking we walked about one-fourth mile where the road again forded the creek, and here was the very best of locations for chalcedony geodes. We carried several back to the car, but I have never been able to locate Knob Creek again, although I admit I have never hunted for it very long, because there is always a new find to be explored.

South of Brown County State Park can be found "The Hickory Ridge Fire Tower" and five miles south of the tower, in the creek below the W.P.A. quarry, there are many crystal geodes, and here lies one large segment, broken from a monstrous geode that must have been at least five feet in diameter.

Southeast of Bedford and marked on State maps is the Devils Backbone, a high knife-ridge of land transversed by a highway that, near the center of the ridge, passes an abandoned farm house and here behind the house, in the deep grass and bushes, can be seen rows of geodes that marked the border of old flower beds, and we know that some early Pioneer wondered at their strange symmetry and loved their color and crystals just as we do today.

At the west end of the ridge a road turns north off of the ridge and on this hill I found a beautiful crystal geode containing a large barite crystal, but when I opened it with a blow of my hammer, the crystal shattered and I found that I had ruined the most interesting geode I ever found.

Several miles north on this same narrow road, on a steep hill, I found a huge ninety pound geode which opened nicely to show a sparkling interior of well formed quartz crystals, and now this beautiful specimen occupies the place of honor, under an evergreen tree, in my front yard where it causes much favorable comment from passers-by

One of my last and best finds was in a most conspicuous place just north of Harrodsburg on route 37, (in S. Monroe County—Monroe County borders Lawrence County on the north).

My family and I had stayed for the night at the "Beaches", a fine clean tourist cabin, where the proprietor knew far more about the Indiana University's football team than he did about the local rocks and minerals.

About a mile south of the camp the road goes down a steep hill and crosses above the railroad and here in a cliff, where the road was cut thru the rock, I noticed where a geode had been cut thru by the road workers. The part of the geode securely embedded in the rock was

about thirty inches in diameter and it was well filled with crystals. There also I found a broken crystal geode that would make a most beautiful bird-bath, but I left it where it lay as a person can't bring home everything.

What I liked most about the geodes here was the large number of good sized ones that when lifted seemed light in weight, which means that they are hollow, and are usually lined with quartz crystals, chalcedony, or sometimes calcite, of these I like the quartz crystals best and obtained eleven nice ones here.

On top of the cliff I also found a gigantic speciman weighting 150 pounds which was so symmetrical and well formed that I determined to bring it home, so I rolled it carefully down the hill and out to the road where I finally managed to get it into the trunk of my car. I have not opened it for, because of its weight, I believe it to be solid.

I never tire of geode hunting as most deposits differ from each other, sometimes in out side color, and sometimes in the interior. When a geode is opened with a heavy hammer a glittering surprise often awaits the collector, and the end of the trip finds one with the satisfaction that comes from a day in the open, and with the specimens of interest and beauty to keep up the enthusiasm until time for the next trip.

I wish to thank *Rocks and Minerals* for many of my new rock friends. After my previous article about the "Cone in Cone" of Copperas Mountain, I received many letters asking to exchange minerals for the cones and as a result, my supply of cones was exhausted so now I am planning another trip to Copperas to replenish my supply.

A Siderite Mine in France

In the southwestern part of France (in the southern part of the Department of Basses-Pyrenees) are deposits of siderite which are mined. One important mine is at St. Etienne-de-Baigorry, 28 miles southeast of the large city of Bayonne, a seaport on the Bay of Biscay.

At the mine a number of interesting minerals have been found some of which are the following:

Chalcopyrite: small sharp crystals associated with tetrahedrite.

Quartz (Rock Crystal): nicely crystallized and associated with siderite.

Siderite: crystalline, also nicely crystallized and associated with a number of minerals.

Tetrahedrite: sharp dark gray crystals associated with chalcopyrite crystals, rock crystals, siderite crystals, etc.

Collecting Geodes

(*Continued from Page* 109)

So ended the high spot of 17 years of fun and adventure for two nut-brown boys who never felt better in their young lives. There are field trips and field trips, but nothing to equal an expedition on a bicycle.

Copper Sands in the Philippines

Copper ore is widely distributed in the Philippine Islands and has been mined at a number of places. Of special interest to collectors is native copper which is found at several localities in the Malaguit basin, near Paracale, in the province of Camarines Norte, in the southeastern part of the island of Luzon. In the river beds of this region, copper sands may be found The copper occurs in fine grains, associated with gold, hematite and magnetite. Small grains of pyrite and tiny zircon grains are also found in the sands.

Water Caves of Yucatan

(*Continued from Page* 106)

and stalagmites occur in this cave and in other caves of the peninsula.

The underground rivers furnish the water supply for all the inhabitants and the caves are continuously visited by the Indians who carry out the water in large jugs. As has already been mentioned, many of the houses obtain their water supply by means of pumps.

In some places of Yucatan, the caves furnish excellent swimming pools—at least they furnish a cool retreat at midday from the intense heat of the country.

ARTIFICIAL FLUORESCENCE IN MINERALS

By E. W. BLANK
Jersey City, N. J.

Lately the writer was shown a speciman of lavender colored lepidolite from a locality near Portland, Conn., which strangely enough exhibited a pale blue fluorescence under the radiation from an Argon bulb. This fluorescence was blue-white in color and strongly reminiscent of that displayed by fuel oil and lubricating oil. The specimen showed no external evidence of having been contaminated with oil but that is what must have occurred because after rinsing the specimen in petroleum ether the fluorescence disappeared. The specimen probably had become contaminated with discarded crankcase oil or lubricating oil employed on machinery used at the quarry.

Subsequently the writer ran across a reference (1) in which attention is directed to the fact that polished gems occasionally display a short-lived fluorescence immediately after polishing due to absorption of the kerosene used as a lubricant. The liquid slowly volatilizes at room temperature and the fluorescence then disappears. The kerosene can, of course, be removed immediately by washing with petroleum ether or commercial cleaning fluid.

The artificial coloring of agates is an established art at Idar-Oberstein, Germany (2). The fact that a material as hard and apparently non-porous as quartz can be successfully impregnated with chemical solutions led to the thought that in an analogous manner instead of artificially coloring a mineral it might be impregnated with a fluorescent chemical thus giving it an artificial fluorescence.

A large number of fluorescent solutions are known but in this particular experiment a specimen of lepidolite was first soaked for several weeks in a strong solution of uranyl zinc acetate, rinsed repeatedly with water and then immersed for an equal length of time in a strong solution of sodium chloride. A reaction takes place in which sodium uranyl zinc acetate is precipitated in the interstices of the mineral. This reaction is a well known one in universal use in chemical laboratories for .the determination of sodium (3) After washing and drying the specimen gave a brilliant yellow-green fluorescence under the Argon bulb.

Such experiments offer an enticing field for chemical experimentation. On the other hand, one should beware of peculiar fluorescent properties in minerals that are not definitely known to fluoresce in their natural state.

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(2) Kraus and Holden, "Gems and Gem Materials," 1st Ed., p. 93, McGraw-Hill Book Co., Inc., New York (1925).

(3) Kolthoff and Sandell, "Textbook of Quantitative Inorganic Analysis," p. 395, The Macmillan Co., New York (1938).

A Copper Mine near New Albany, Penn.

New Albany is a small village in the southern part of Bradford County, of N. E. Pennsylvania. About 1½ miles from the village is the old abandoned Carpenter copper mine, on a small branch of the Towanda Creek.

Two waterfilled tunnels are found in a small ravine close to the main road. The ore vein, which consists of chalcocite, malachite, melaconite, and tenorite, occurs in a narrow horizontal gray shale bed between red shale on top and a limestone conglomerate on the bottom. The rocks are of Devonian age.

There is another mine, which consists of a short tunnel, and where conditions are similar to the Carpenter mine, that is only ¾ of a mile from New Albany. This tunnel was driven many years later, after the Carpenter mine was opened, and as no name is know for it, it can be called the "newer" workings. This, too, is abandoned.

High Point, Highest Point In New Jersey

One of the most interesting spots in New Jersey is High Point Park in the extreme northern part of the state (in N. Sussex County). In this park is the highest elevation of land in the state, called High Point. A tower 220 ft high and built of gray limestone has been erected on the site. Two signs here read as follows:

To left of entrance

HIGH POINT MONUMENT
Height 220 feet
Base 34 feet square at the platform
and 19 feet square where apex begins
The base of the monument is erected on
the highest point in the State of N. J.
Altitude 1877 feet above sea level
Corner stone laid June 8, 1929
1930

To right of entrance

This monument is erected by
Colonel and Mrs. Anthony R. Kuser
to the glory and honor
and eternal memory of
New Jersey Heroes
By land and sea and air
in all wars of our country

The monument is opened to visitors (admission 10c) and one must climb the stairs to the top as there is no elevator. From the top a wonderful view can be had of the surrounding country.

The monument stands on gray sandstone (with some conglomerate); its white shaft is so distinct and prominent that it can be seen for miles.

Bismuthinite Occurrence In Alaska

Bismuthinite is bismuth sulfide of a lead-gray to tin-white color. It is a rare mineral and the most important deposits are in Bolivia.

In Alaska an interesting occurrence is in the southern part of Seward Peninsula (25 miles due north of Nome) in the western part of the country. The occurrence is on Charley Creek where quartz veins occur in schist. The quartz carries tiny veinlets and small masses of bismuthinite.

Hulsite from Brooks Mt., Alaska

Near the southern shore of Seward Peninsula, in western Alaska, is Brooks Mt. (2918 ft. high), the dominant peak of the York Mountains which extends from east to west. The geographical location of the mountain is 167° 15' W. Long., and 65° 30' N. Lat. It is about 9 miles north from the coast (Bering Sea.)

Brooks Mt. is in the famous tin region of Seward Peninsula and it has been much prospected in search of the ore. On the northwestern flank of Brooks Mt., in a prospect cut that had been opened in a metamorphic limestone at a granite contact, a new mineral was discovered about 1908, which analyses proved to be a boron-tin mineral. It was named hulsite in honor of Alfred Hulse Brooks, of the U. S. Geological Survey.

The characteristic features of hulsite are its strong submetallic luster, black color, good cleavage, hardness 3, sp. gr. 4.28. It contains about 20% tin oxide.

Hulsite, in small crystals or tabular masses, is associated chiefly with white cleavable calcite, black masses of magnetite, and small greenish gemmy crystals and grains of vesuvianite. Fluorite and garnet are also present at the locality.

Reference

Tin deposits of Seward Peninsula, Alaska, by Adolph Knopf, U. S. Geol .Sur. Bull. 358, Washington, D. C., 1908, p. 23.

World's Deepest Hole Is Now In California

In the Nov. 1944, issue of *Rocks and Minerals* (p. 338), it was stated that the world's deepest hole, an oil well 15,279 feet deep, was in Texas. Since then, two members of the R. & M. A., C. A. Noren of Fresno, Calif., and E. R. Leach, of Piedmont, Calif., have called our attention to another hole, and in their state, which is much deeper. This is being drilled for an oil well which on Dec. 3, 1944, was down 16,061 feet (3.04 miles).

The hole is in the South Coles Levee field, on the west side of San Joaquin Valley, 11 miles east of Taft, Calif. It was drilled by the Standard Oil Company of California.

Mr. Noren informed us on Jan. 19, 1945, that the hole was stopped at 16,246 feet (377 miles.)

Club and Society Notes

Mineral Society of Utah

At the Jan. meeting of the Mineralogical Society of Utah the following officers were elected for the ensuing year. President, Junius J. Hayes; 1st Vice Pres., Mrs. Marie Crane; 2nd Vice Pres., Wm. T. Rogers; Treasurer, Mrs. Lillian Lockerbie; Secretary, Mr. Forace Green; Historian, Mr. Sears P. Roach.

Our society now numbers 120 people without the junior society. We published four Bulletins last year.

Queens Mineral Society

Here is a report on our activities for the past season.

July: Mr. Allen Green delivered the last of the talks on rocks—the Sedimentary. This completed the series of talks by Mr. Green, preceded by the Igneous and the Metamorphic Rocks

August: Dr. Otto Trautz spoke on X-ray Crystallography. He had several X-ray cameras on display.

September: Summer collecting meeting. Most of the collecting was done by Mr. Allen Green who had made a trip to Colorado and brought back many fine specimens.

October: Mr. Frank Lewis spoke on unusual gems and showed beautiful examples of apatite, fluorite, feldspar, smoky quartz, iris agate, etc.

November: Mr. Theodore Fredericks spoke on minerals of the mica group and related minerals. He and other members supplied many examples of the minerals discussed.

December: A talkie movie on the lead mines of S. W. Missouri. After the film Mr. Green spoke on the geology of the region and precipitated quite a discussion on the mode of formation of the lead ores.

January, 1945: Mrs. Edward Marcin spoke on the rare minerals of Branchville, Conn.

Concurrently with our formal program we have a well organized educational program as well. 1. Mr. Helbig conducts a Saturday class for beginners in mineralogy. 2. Mr. Segeler conducts a weekly class in blowpiping and crystallography for more advanced collectors. 3. Brooklyn College will give a course in optical mineralogy for qualified students. Dr. Wilbur Valentine will conduct the course which will begin on Feb. 13 and will be held every Tuesday. We are very proud to be a pioneer in organized education for members of our Society.

At the January meeting election of officers were held and the following are to serve for 1945: President, Mr. Curt Segeler; Vice-Pres., Dr. Otto Trautz; Secy.-Treas., Mr. Theodore Fredericks, 473 Harmon St. Brooklyn 27, N .Y.

Mrs. Edward Marcin, Secy.

Los Angeles Lapidary Society

The L. A. Lapidary Society held its regular dinner meeting, Monday, January 8th, at the Friday Morning Club. An excellent program, prepared by Mr. Loren Mitchell followed, consisting of a fine lecture by Ralph Slight, Southern California representative of the Vermont Marble Company. Mr. Slight told of the various types of marble and the different parts of the world where it was found. A motion picture of the industry showing all the steps in quarrying and preparing the material for market was shown. Over 100 members and friends were present .

Another very important meeting was called by the president, Mr. Willis, to consider the coming exhibit. He chose Mr. Archie Michaeljohn for show chairman. Mr. Michaeljohn has had the experience of directing the fine exhibit our society had in 1943. A sub-committee has been chosen including Mr. Fred Rugg, Mr. Rosenberg, Mr. McCornack, Mr. Mitchell, and others. This show will be bigger and better than any given before.

CHAS. G. SCHWEITZER
Reporter

Newark Mineralogical Society

The 226th meeting of the Newark Mineralogical Society was held Sunday, Oct. 1st, 1944, at 3 P. M. in The Newark Museum, Science Dept., 3rd floor, 47 Washington St., Newark, N. J.

The President, Mr. Herman E. Grote, opened the meeting and presided. Attendance 30.

Program for the afternoon: Mr. Louis Reamer gave a talk and demonstration on Fluorescence; many beautiful gowns were modeled, lace table covers, uranium glasses, minerals, flowers, large painting of the Lord's Supper, etc. were exhibited—the display was entertaining and spectacular.

The 227th meeting was held on November 5th, 1944, (Twenty-eighth Annual Meeting). Election of officers and trustees: President, Mr. Herman E. Grote, (re-elected); Vice-President, Mr. Paul G. Kellinghausen;; Secretary, Mr. Louis Reamer (re-elected) Treasurer, Mr. Leonard A. Morgan ,re-elected); Trustees, Mrs. Wm. T. Bather (2 years), Mrs. Edwin W. Bemis (1 year).

Following the business and election of officers the program for the remainder of the afternoon was devoted to a talk by Mr. Aubrey J. Slater on the Copper of Connecticut. Attendance 26, adjourned 5:30 p.m.

The 228th meeting was held on December 3rd, 1944. The President, Mr. Grote, announced the order of business be dispensed with in order to give time for the program. The speaker for the afternoon was Mr. Edwin Skidmore

who gave a talk and demonstration on luminescence of minerals, and exhibited many interesting Kodachrome slides.

Mr. Skidmore's talk and demonstration will long be remembered from the display of colorful minerals responding to the U. V. Light. Attendance 32, adjourned 5:40 p.m.

The 229th meeting was held on January 7, 1945. The President, Mr. Grote, announced that the order of business be dispensed with in order to give time for the program. Mr. Rodney Miller, of the Science Department of the Newark Museum, gave a very interesting talk on "Rocks of New Jersey". Attendance 20, adjourned 5:30 p.m.

Louis Reamer, Sec.

Los Angeles Mineralogical Society Hears Dr. Oakeshott on the San Gabriel Mountains

Almost a hundred members and guests attended the January 18th, 1945 meeting of the Los Angeles Mineralogical Society and heard Dr. Gordon B. Oakeshott, Instructor in Earth Sciences at Compton Junior College, give a fine talk on the "Geology and Mineralogy of the San Fernando Quadrangle and the Western San Gabriel Mountains." Dr. Oakeshott has done a great deal of work in preparing new geological maps of this area and spoke on his subject with both enthusiasm and authority.

As part of the business meeting which preceded the speaker of the evening, M. Ernest Peterson, Chairman of the committee "Mineralogy in the Schools", amplified the preliminary report of his committee as printed in the January issue of the *Pacific Mineralogist*. Considerable progress has already been made on a program for stimulating interest in Mineralogy among Junior High School students, in collaboration with the Visual Education Department of the Los Angeles City Schools.

Many fine geodes were displayed by "Benny" Benedict and others and door prizes awarded. A book raffle was held and the response indicated that this was a welcome innovation that might bear repeating. Chuck Jordan brought over a considerable quantity of minerals which seemed to meet with favor—there were a lot less of them to take back.

The continued influx of new members and the re-awakening interest of more and more older members, has made it necessary to arrange with Boos Brothers for more room in which to operate. The society furnishes ample proof that good programming of meetings provides relaxation when it is needed most.

Maine Mineralogical & Geological Society

At the meeting held in Portland, Me., on Feb. 23, 1945, several members gave papers on sulphates and sulphides. The main feature, however, were five motion pictures on asbestos, sulphur, and formation of the soil which had been procured by Herbert Haven.

Rochester Academy of Science (Mineral Section)

At the Feb. 8, 1945, meeting, Miss Helen Foster presented an illustrated lecture on rock formations; at the Feb. 15th meeting, Dr. George B. Cressey was the speaker whose subject was "Report from Asia." Both meetings were held at the Rochester Museum of Arts & Sciences, Rochester, N. Y.

Northern California Mineral Society

Four meetings of the Society were held in San Francisco, Calif., during February, 1945: Feb. 2nd, business meeting; Feb. 16th, micromount meeting; Feb. 21st, general meeting; Feb. 23rd, lapidary night.

Pacific Mineral Society

At the meeting held on Jan. 16, 1945, R. J. Sampson, mining engineer, was the speaker whose subject was "Minerals of San Bernardino Co., Calif." The Society meets in Los Angeles, Calif.

East Bay Mineral Society

Two meetings, at the Lincoln School in Oakland, Calif., were held during February, 1945, by the Society. On Feb. 1st, "Minerals in thin section" (prepared by William B. Pitts but who could not be present) were shown by J. Lewis Renton. On Feb. 15th, a talk on "Micro-mineral Mounts" was given by George H. Needham.

Mineralogical Society of So. California

"An Exploration of the Indian Country of the Southwest", an intensely interesting colored movie, was presented by Bill Sanborn at the meeting of the Society held on Feb. 12, 1945, at the Public Library, Pasadena, Calif.

Colorado Mineral Society

V. V. Peterson addressed the Society at its meeting held in Denver, Colo., on Feb. 2, 1945. His subject was "Pictographs and Petroglyphs of the Southwest."

Boston Mineral Club

Prof. Alonzo Quinn, of the Dept. of Geology, Brown University, Providence, R. I., was the speaker at the Feb. 6, 1945, meeting whose subject was "Manganese Deposits of Plainfield, Mass."

Marquette Geologists Association

A regular meeting was held at the Association's headquarters, Academy of Sciences, Chicago, Ill., on Sat. Feb. 3, 1945. The speaker was V. Stuart Cramer whose subject was "Trilobites".

Mineralogical Society of Dist. of Columbia

Dr. James H. Benn, of the U. S. National Museum, addressed the Society on Feb. 16th, 1945. His subject was Superstitions and Facts of Birth Stones". The Society holds its meetings at the U. S. National Museum, Washington, D. C.

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. . . With Our Dealers . . .

Schortmann's Minerals, of Easthampton, Mass., received such a fine response to their last month's ad that they are repeating it again this month. Incidentally, don't forget their Annual Exhibition-Sale this month, on the 16th and 17th.

A new advertiser this month is Tru-Lite Research Laboratories, of Indianapolis, Ind., whose offerings are diamond saw blades—new and recharged. They have other lapidary equipment—send for their literature!

Warner & Grieger, of Pasadena, Calif., offer collectors four beautiful minerals—variscite, fluorite, wernerite, and wulfenite. And—they are repeating their lapidary supplies ad of last month.

Another selection of fine minerals from an old collection is offered this month by Hugh A. Ford, of Cambridge, Mass. This collection won't last long so you better get some of the specimens now!

Real value in fine quality specimens—is the title of the ad of E. Mitchell Gunnell, of Denver, Colo. His fine minerals come from all over the world!

The Colorado Gem Co., of Bayfield, Colo., extend an invitation to all our readers to visit Gem Village. Arrange your trip so that it will include a visit to the only gem colony in America!

A March special is featured this month by James W. Riley, of Springfield, Ohio. His specials are very popular!

Another new advertiser is Roberts & Stevens, of Montery Park, Calif., who offer their first specimen—beautiful coralloidal aragonite from Bisbee, Ariz.

Some western specialties are advertised this month by Marvin's Rock Shop, of Durango, Colo. Western minerals are always in demand by collectors!

Want to buy a diamond saw outfit? Culbertson, of Casper, Wyo., has one for sale!

A. E. Davies, of Alamo, Calif., has a professional lap outfit for sale. Better rush your order if you want it!

Goldfield, Nev., is famous for its gold, silver, and gem mines and also for its great dealer, W. Dart. Flash!—some unusually fine bornite was found here on Feb. 3, 1945. Better order it!

Hey! the H. E. Powell Co., of Little Rock, Ark., have a big house-cleaning sale this month! Don't let them *throw* anything away on you. Get there first ! ! !

We are grieved to report that Mrs. Kathleen Kitchell, is quite ill. Let us pray for her speedy recovery. In the meantime her father, Frank Duncan, of Terlingua, Texas, is doing his best to carry on alone. Will all readers who send in orders be patient if they are slow in being filled!

Cp. Walter H. Printz, of Hanford, Calif., reports he has only a few slabs left of that very fine Brazilian agate which has met with much favor. He expects to have more in the near future so watch his ads!

Do you like Nevada minerals? Some unusually fine specimens from this state are advertised by Hatfield Goudey, of Yerington, Nev., Look, read, and order!

A. L. Jarvis, of Watsonville, Calif., has acquired a wide stock of choice minerals from all over the country—east—west—north—and south. Some are listed in his ad—look them up!

One of the finest dealer's editorials we have ever read appears in this issue. Do not overlook it! Read "At the end of the trail" by the Ozark Biological Laboratories, of Hot Springs National Park, Ark.

Want any fluorescent specimen labels? For the first time, to our knowledge, these are offered for sale and by Ward's Natural Science Est., of Rochester, N. Y.

On March 1st, J. L. Davis, of Hot Springs Ark., issued his new descriptive price list. We hope your name is on his mailing list but if not—send it in today!

Wilfred C. Eyles, of Bayfield, Colo., spent one month on his annual buying trip to the Pacific Coast. We heard, indirectly that so many barrelfuls of minerals were arriving in Bayfield that folks in that area were greatly excited—they though an army camp was being established! Mr. Eyles, as we all know, is the manufacturer of the famous "Streamliner" diamond saw.

Thanks to Mr. Wilfred C. Eyles, we have another new advertiser this month—the Pan-American Mining Co., of Bayfield, Colo. We are assured by Mr. Eyles that the gem material offered is unusually good. Better order some!

A new stock of fine minerals has been acquired by Wyoming Minerals, of Laramie, Wyo. Some are listed in their ad!

Everts L. Horton, of Bethesda, Md., is with us again with more offerings of choice mineral specimens. Don't pass his ad by!

A. J. Alessi, of Lombard, Ill., confines his ad this month entirely to books—22 of them to be exact. How many do you need? He will be glad to take your order!

Please note the change in the firm's name of the famous Vreco lapidary supplies. It is now the Vreeland Manufacturing Co., of Portland, Ore.

An interesting mineral is the dual purpose ore advertised by Robert Roots of Denver, Colo. You surely will order it.

We welcome back E. P. Matteson, of Brea, Calif. (formerly of Phoenix, Ariz.). Read his interesting announcement!

Also note the change of address of the Wiener Mineral Co., of Tucson, Ariz. It is now P. O. Box 509 (instead of 125 N. Stone Ave.)

BUREAU OF MINES RELEASES SYNTHETIC RUBBER FILM

One of the most phenomenal wartime achievements of American industry—the quantity production of synthetic rubber from petroleum and coal-tar products and other substances—is portrayed in a new sound motion picture, "Synthetic Rubber," which was released recently by the Bureau of Mines for free showing.

The 16-millimeter film, produced in cooperation with a large manufacturer of synthetic rubber, traces the history of the development of the first rubber-like material in 1892 to present-day production methods which will make possible the output of between 850,000 to 875,000 tons of synthetic rubber in 1944, according to Dr. R. R. Sayers, Bureau Director.

With a running time of 28 minutes, "Synthetic Rubber" explains in nontechnical manner how butadiene from petroleum and grain alcohol are combined with either styrene or acrylonitrile, products of the coal-tar industry, to produce either "S" type synthetic rubber for tires or "N" type for self-sealing airplane gasoline tanks and other war uses. Dr. Sayers informed Secretary of the Interior Harold L. Ickes that the manner of approach employed in the film makes it ideal for showing before all types of audiences, war-training classes, the armed forces, public and private schools, civic organizations, and other groups.

Included in the film are many interior and exterior "shots" of synthetic rubber plants to describe step-by-step the processes involved in the transition of chemicals to synthetic rubber. The film is introduced with prewar views of rubber plantations and describes the obstacles which American industries overcame to go into mass production of synthetic rubber when war cut off most of the imports of natural rubber. Other possible sources of rubber, such as milkweed, the guayule plant, and Russian dandelion, are discussed in the film's extensive coverage of the subject.

Interesting comparisons concerning various phases of the synthetic rubber industry are presented in the motion picture. The film shows that 1.7 bushels of grain or 3.6 gallons of liquefied butane are required to produce enough butadiene for the average-size automobile tire; that Germany, hoarding petroleum and grain, must use 41 pounds of coal and 80 pounds of limestone to obtain enough butadiene for a small tire; and that America's synthetic rubber, in many instances, is superior to natural rubber.

Actual scenes from synthetic rubber plants show the mixing of chemicals, the various equipment employed, and the processing methods which produce the special synthetic materials required by industry and the armed forces. By animation and scenes of actual tests, the picture describes the action of self-sealing gasoline tanks which were made possible by synthetic rubber and which have saved the lives of many airmen on combat missions.

Applications for free short-term loans of the film "Synthetic Rubber" should be addressed to the *Bureau of Mines Experiment Station, 4800 Forbes Street, Pittsburgh 13, Pennsylvania,* and should state specifically that the borrower is equipped to show 16-millimeter sound films. No charge is made for use of the film but the exhibitor is expected to pay transportation charges and for loss or damage other than normal wear.

Club and Society Notes

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New Jersey Mineralogical Society

"The Diamonds in your life". This was the subject of Mrs. Gladys B. Hannaford, of the DeBeers Diamond Syndicate, who was the speaker at the Feb. 6th, 1945, meeting of the Society whose headquarters are in the Public Library, Plainfield, N. J. Mrs. Hannaford is at well-known speaker on the subject of diamonds and her lectures in behalf of the world-famous DeBeers Syndicate have been presented before many universities, schools, and other groups.

Mineralogical Society of Arizona

Two meetings of the Society were held in February, 1945, on the 1st and 15th. At these meetings, demontrations in determinative mineralogy were the main topics.